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EXAMINER

TRIEU, THAI BA

ART UNIT PAPER NUMBER

3748

DATE MAILED: 08/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/795,805

Applicant(s)

SQUIRES, RICHARD K.

Examiner

Thai-Ba Trieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 38-123 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53,55-57 and 59-64 is/are allowed.
- 6) ☒ Claim(s) 38-42,44-52,65,66,68-87 and 90-123 is/are rejected.
- 7) ☒ Claim(s) 88 and 89 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 01/18/2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 15, 2005 has been entered.

Claims 38, 53, 59, 65, and 70 were amended; Claims 43, 54, 58, and 67 were cancelled; and Claims 75-123 were added.

Upon the reconsideration, the indicated allowable subject matter of claims 43,46-47, 49, 54, 58-59, 61-64, and 67-72 has been withdrawn.

Terminal Disclaimer

Terminal disclaimer filed on May 19, 2005 is approved.

Information Disclosure Statement

The Information Disclosure Statement filed on January 18, 2005 and mailed on March 15, 2005 lacks Examiner's Initials. A correct copy is provided hereto.

Specification

The amendment filed on May 19, 2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no

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amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

- The **"throttle body"** (See Claims 66, 91, and 101 line 2).

Claim Objections

1. Claims 53, 59, and 87 are objected to because of the following informalities:

- In claims 53 and 87, line 3, **"a"** before **"turbocharger"** should be replaced by **– the –** (*for addressing double recitation*).
- In claim 59, line 2, **"vehicle of claim 58"** should be replaced by **– vehicle of claim 53 --**, since claim 58 has been cancelled by the amendment filed on May 19, 2005. Appropriate correction is required.

2. Claim 104 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Since the limitation in claim 104 has been recited in claim 100 upon which claim 104 depends.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 51; claim 75 and its dependent claims 76-81; claim 82 and its dependent claims 53-86; claims 87 and its dependent claim 88-89; claim 90 and its dependent claims 91-99; claim 100 and its dependent claim 101-106; claim 109 and its dependent claims 110-115 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

1. In claim 51, the recitation of ***"said oil pump being remotely mounted away from the engine compartment of the vehicle"*** renders the claim indefinite, since it is not clear that which location in the vehicle is defined to be away from the engine compartment where the oil pump is remotely mounted. Applicant is required to identify the location in the vehicle where the oil pump is mounted on.

2. In claim 75, lines 7-8, the recitation of ***"mounting hardware for remotely mounting the turbocharger away from an engine compartment of a vehicle and on the underside of the vehicle"*** renders the claim indefinite, since it is not clear that how far away the turbocharger is remotely mounted from the engine compartment, in which location in the vehicle the turbocharger is remotely mounted such as at the front wheel, the rear wheel, in the passenger compartment, the roof of the vehicle, or at any location on the under-floor/or under-body of the vehicle, or the turbocharger having a mounting hardware and being mounted on a shelf or a table which is away from an engine

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compartment of a vehicle Applicant is required to identify the location in the vehicle where the turbocharger can be remotely mounted.

Additionally, lines 10-11, the recitations of ***“said air filter being coupled to the underside of the vehicle and relatively isolated from road debris”*** renders the claim indefinite, since it is not clear that which portion of the underside of the vehicle relatively isolated from road debris applicant wants to be referenced to? Applicant is required to identify the location in the vehicle where the filter is positioned.

3. In claim 80, lines 1-2, the recitation of ***“said oil pump being mounted to an underside of the vehicle”*** renders the claim indefinite, since it is not clear that which location of in the vehicle underside is defined to mount the oil pump. Applicant is required to identify the location in the vehicle underside where the oil pump is mounted on.

4. In claim 82, lines 5-6; claims 87, line 4; claim 90, lines 7-8; and claim 100, lines 9-10, the recitation of ***“remotely mounting the turbocharger to/at the location on an underside of the vehicle and away from an engine compartment of a vehicle”*** renders the claim indefinite, since it is not clear that which location/part of the vehicle underside and how far away the turbocharger is remotely mounted from the engine compartment, in which location in the vehicle the turbocharger is remotely mounted such as at the front wheel, the rear wheel, in the passenger compartment, the roof of the vehicle, or at any location on the under-floor/or under-body of the vehicle, or the turbocharger having a mounting hardware and being mounted on a shelf or a table

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which is away from an engine compartment of a vehicle. Applicant is required to identify the location of the vehicle underside and the location far away from the compartment where the turbocharger can be remotely mounted.

5. In claim 83, the recitations of ***“said air filter being coupled to the vehicle and relatively isolated from road debris”*** renders the claim indefinite, since it is not clear that which portion of the underside of the vehicle relatively isolated from road debris applicant wants to be referenced to? Applicant is required to identify the location in the vehicle where the filter is positioned.

6. In claim 95, line 2; claim 100, lines 14-15, the recitation of ***“mounting the oil pump proximate an underside of the vehicle”*** renders the claim indefinite, since it is not clear that how proximate to the muffler such as 1 inch, 2 inches, 10 cm, or 10 mm, the hardware for mounting the oil pump is mounted. Applicant is required to define the proximate distance to the underside where the mounting hardware can be mounted.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 38 is rejected under 35 U.S.C. 102(b) as anticipated by Ruf et al. (Patent Number 4,716,735).

Ruf discloses a turbocharger system for on internal combustion engine, comprising:

a turbocharger (2,3);

an oiling system (5, 6, 14, 15) coupled to the turbocharger for supplying oil to the bearings (Not Numbered) of the turbocharger (See Column 2, lines 14-24);
and

mounting hardware (10) for remotely mounting the turbocharger away from on engine compartment of a vehicle (See Figures 1-2).

Note that the recitation of "***for remotely mounting the turbocharger away from on engine compartment of a vehicle... muffler***" is considered as the functional language. Ruf discloses all the structural components of a turbocharger system, which are identical to those of the instant invention. Therefore, the Ruf system is capable of performing the same desired function as the instant invention having been claimed in claim 1. Additionally, a turbocharger having a mounting hardware, as taught by Ruf, can be mounted every where in a vehicle except the engine compartment, or can be mounted on a shelf or a table which is away from the engine compartment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 39-42, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf et al. (Patent Number 4,716,735), in view of Widenhorn (Patent Number 5,499,693).

Regarding claims 39-42 and 44, Ruf discloses the invention as recited above, and further discloses said turbocharger includes an oil inlet (5), an oil outlet (6), an exhaust inlet (Not Numbered), an exhaust outlet (Not Numbered), an air charge inlet (Not Numbered), and an air charge outlet (Not Numbered) (Clearly seen in Figure 1).

However, Ruf fails to disclose an oil inlet configured for being coupled to a pressure side of said oiling system; an oil pump in fluid communication with said turbocharger; a valve; and said oiling system including the oiling system of the vehicle.

Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize an oil inlet configured for being coupled to a pressure side of said oiling system (via 3, 10); wherein said oiling system comprises an oil pump (4) in fluid communication with said turbocharger (7); a valve (11) in fluid communication with the oil inlet (10 to 11 to 20, and then to 21) of the turbocharger to prevent oil from flowing into the turbocharger when the pressure on the pressure side of the oiling system drops below a predetermined level; wherein said oiling system includes the oiling system of the vehicle; wherein an outlet of said valve is positioned before said oil inlet of said turbocharger (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized an oil inlet configured for being coupled to a pressure side of said oiling system; an oil pump in fluid communication with said turbocharger; a valve; and said oiling system including the oiling system of the vehicle, as taught by Widenhorn, to improve the efficiency of the Ruf turbocharger.

Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf et al. (Patent Number 4,716,735), in view of Widenhorn (Patent Number 5,499,693); and further in view of Minami et al. (Patent Number 4,422,295).

The modified Ruf device discloses the invention as recited above; however, fails to disclose an air filter.

Minami teaches that it is conventional in the art of lubricating system for a turbocharger to utilize an air filter (17) coupled to the air charge inlet of the turbocharger (See Figure 1).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized an air filter, as taught by Minami, to improve the efficiency of the modified Ruf turbocharger, since the use thereof would have cleaned the air before the air is to be delivered to the turbocharger.

Claims 46-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf et al. (Patent Number 4,716,735), in view of Widenhorn (Patent Number

5,499,693) and Minami et al. (Patent Number 4,422,295); and further in view of Design Choice.

The modified Ruf device discloses the invention as recited above, and further discloses a duct for coupling said filter air to said turbocharger (via 18) (See Figure 1); however, fails to disclose the location of the air filter.

One having an ordinary skill in the turbocharger art, would have found **"the location of the filter being mounted away from the engine compartment of the vehicle and relatively isolated from the road debris, and in a fender well of the vehicle"** in the instant application as a matter of design choice. Moreover, there is nothing in the record, which establishes that **the claimed position of the filter being mounted away from the engine compartment and relatively isolated from road debris and in a fender of the vehicle**, presents a novel of unexpected result (See In re Kuhle, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf et al. (Patent Number 4,716,735), in view of Widenhorn (Patent Number 5,499,693); and further in view of Pleuss et al. (Patent Number 6,688,103 B2).

The modified Ruf device discloses the invention as recited above, however, fails to disclose a waste gate.

Pleuss teaches that it is conventional in the exhaust gas turbocharged internal combustion engine art, to utilize a wastegate (36) coupled between an exhaust system

of the vehicle at a location before the exhaust inlet of the turbocharger and a wastegate control system for regulating boost pressure (See Figure 1, Column 3, lines 19-21).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a wastegate, as taught by Pleuss, to improve the efficiency of the Ruf device, since the use thereof would have controlled/regulated the charge pressure.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Evenko (Patent Number RU 20282889 C).

Ruf discloses a turbocharger system for an internal combustion engine, comprising:

a turbocharger (2,3);

an oiling system (5, 6, 14, 15) coupled to the turbocharger for supplying oil to the bearings (Not Numbered) of the turbocharger (See Column 2, lines 14-24);
and

mounting hardware (10) for remotely mounting the turbocharger away from an engine compartment of a vehicle (See Figures 1-2).

However, Ruf fails to disclose a water injection system.

Evenko teaches that it is conventional in the art of cooling a supercharged internal combustion engine, to utilize a water injection system (10, 13, 12, 7, 6) coupled to a charge air tube (4) for injecting water into a flow of gases exiting the turbocharger to cool the flow gas (See Figure and Abstract).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a water injection system, as taught by Evenko, to improve the efficiency of the Ruf device.

Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf et al. (Patent Number 4,716,735), in view of Widenhorn (Patent Number 5,499,693), and further in view of Design choice.

The modified Ruf device discloses the invention as recited above; however, fails to disclose said oil pump being remotely mounted away from the engine compartment of the vehicle.

One having an ordinary skill in the turbocharged internal combustion engine art, would have found the location where said oil pump being remotely mounted away from the engine compartment of the vehicle, as a matter of design choice depending on the size of the vehicle. Moreover, there is nothing in the record which establishes that the claimed location of the oil pump, presents a novel or unexpected result (See *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claims 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf et al. (Patent Number 4,716,735), in view of Widenhorn (Patent Number 5,499,693); and further in view of Werner (Patent Number 5,323,612).

The modified Ruf device discloses the invention as recited above; however, fails to disclose a pump controller.

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Werner teaches that it is conventional in the turbocharger art, to utilize a pump controller (20) for varying the speed of the pump (21) according to engine speed (See Figures 1 and 4, Column 3, lines 66-68, and Column 4, lines 1-5).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a pump controller, as taught by Werner, to improve efficiency, in the modified Ruf device.

Claims 65-66 and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735).

Minami discloses a turbocharger installation kit for combustion engine, comprising:

- a turbocharger (12) (See Figure 1);

- an oil pump (37) for coupling to the turbocharger to assist in the flow of oil through the turbocharger (See Figure 1);

- first exhaust plumbing (via 25, 26) configured for coupling said turbocharger to a flow of exhaust from an engine of a vehicle (See Figure 1);

- first oil line configured for coupling between an oiling system of the vehicle and the turbocharger (See Figure 1);

- a second oil line (via 38, 45) for coupling between the oil pump and the oiling system of the vehicle (See Figure 1);

a first duct (22, 23) for delivering air from the turbocharger to a throttle body of the engine (See Figure 1); and

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1).

However, Minami fails to disclose first mounting hardware.

Ruf teaches that it is conventional in the exhaust gas turbocharger art, to utilize mounting hardware (10) configured for remotely mounting the turbocharger away from an engine of the vehicle.

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Ruf, to reduce the construction cost and to save the space requirement.

Note that the recitation of ***"for remotely mounting the turbocharger away from on engine compartment of a vehicle... muffler"*** is considered as the functional language. The Ruf mounting hardware is capable of performing the same desired function as the instant invention having been claimed in claim 65. Additionally, a turbocharger having a mounting hardware, as taught by Ruf, can be mounted everywhere in a vehicle except the engine compartment, or can be mounted on a shelf or a table which is away from the engine compartment.

Claim 68 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735); and further in view of Widenhorn (Patent Number 5,499,693).

The modified Minami device discloses the invention as recited in the rejection of claims ; however, fails to disclose a valve.

Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize a valve (11) for coupling to the oil line (10 to 11 to 20, and then to 21) and for preventing oil flow into the turbocharger when the engine is not running (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a valve, as taught by Widenhorn, to improve the efficiency of the modified Minami turbocharger.

Claim 70 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295,) in view of Ruf (Patent Number 4,716,735); and further in view of Coester et al. (Pub. Number EP 952329 A).

The modified Minami device discloses the invention as recited above; however, fails to disclose mounting hardware.

Coester teaches that it is conventional in the turbocharged internal combustion engine art, to utilize mounting hardware for mounting oil pump (9) in the lower region of the engine (See Figure 1, and Abstract).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Coester, to mount the oil pump to the engine.

Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295,) in view of Ruf (Patent Number 4,716,735); and further in view of Sundles et al. (Patent Number 4,628,877).

The modified Minami device discloses the invention as recited above; however, fails to disclose electric harness, switch and relay.

Sundles teaches that it is conventional in the internal combustion engine art, to utilize electric harness, switch (45), and relay (39, 41) for providing variable voltage to the oil pump to adequately meet the variable flow requirements of the turbocharger while reducing noise output of the oil pump when flow requirements are minimal (See Figures 1-2, Column 3, lines 43-68, and Column 4, lines 1-68, and Column 5, lines 1-2).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized electric harness, switch and relay, as taught by Sundles, to improve the efficiency of the modified Minami device, since the use thereof would have minimized the friction wear of the turbocharged internal combustion engine during cold starts and provided lubrication to the turbocharger after engine has been shut off.

Claim 72 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295,) in view of Ruf (Patent Number 4,716,735); and further in view of Fehr et al. (Patent Number 4,953,515).

The modified Minami device discloses the invention as recited above; however, fails to disclose a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line.

Fehr teaches that it is conventional in the fuel injection system art, to utilize a hose (4) and fittings (Not Numbered) to connect a fuel pressure regulator (3) to an intake tube (11), an intake manifold, or to an exhaust line (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line, as taught by Fehr to improve the efficiency of the modified Minami, since the use thereof would have controlled the quantity/amount of fuel injecting into the engine.

Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735); and further in view of Pleuss et al. (Patent Number 6,688,103 B2).

The modified Minami discloses the invention as recited above, and further discloses said a waste gate.

Pleuss teaches that it is conventional in the exhaust gas turbocharged internal combustion engine art, to utilize a wastegate (36) coupled between an exhaust system of the vehicle at a location before the exhaust inlet of the turbocharger and a wastegate control system for regulating boost pressure (See Figure 1, Column 3, lines 19-21).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a wastegate, as taught by Pleuss, to improve the

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efficiency of the modified Minami device, since the use thereof would have controlled/regulated the charge pressure.

Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735); and further in view of Werner (Patent Number 5,323,612).

The modified Minami device discloses the invention as recited above; however, fails to disclose a pump controller.

Werner teaches that it is conventional in the turbocharger art, to utilize a pump controller (20) for varying the speed of the pump (21) according to engine speed (See Figures 1 and 4, Column 3, lines 66-68, and Column 4, lines 1-5).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a pump controller, as taught by Werner, to improve efficiency, in the modified Minami device.

Claims 75-76, and 78-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Minami et al. (Patent Number 4,422,295); and further in view of design choice.

Ruf discloses a turbocharger system for an internal combustion engine, comprising:

a turbocharger (2,3);

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an oiling system (5, 6, 14, 15) coupled to the turbocharger for supplying oil to the bearings (Not Numbered) of the turbocharger (See Column 2, lines 14-24); and

mounting hardware (10) for remotely mounting the turbocharger away from an engine compartment of a vehicle (See Figures 1-2).

However, Ruf fails to disclose an air filter, a duct for coupling said air filter to said turbocharger, an oil pump, the oil system of the vehicle, and said air filter being mounted on a fender well of the vehicle.

Minami teaches that it is conventional in the art of lubricating system for a turbocharger to utilize an air filter (17) coupled to the air charge inlet of the turbocharger; a duct for coupling said air filter to said turbocharger (via 18), an oil pump (37) in fluid communication with said turbocharger (12), and the oiling system including the oiling system of the vehicle (See Figure 1).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized an air filter, a duct for coupling said air filter to said turbocharger, an oil pump, and the oil system of the vehicle, as taught by Minami, to improve the efficiency of the Ruf turbocharger, since the use thereof would have cleaned the air before the air is to be delivered to the turbocharger.

Additionally, for the recitations of ***“said air filter being coupled to the underside of the vehicle and relatively isolated from road debris”***, and ***“said air filter being mounted on a fender well of the vehicle”***, one having an ordinary skill in the turbocharger art, would have found the location of the filter in the instant application

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as a matter of design choice. Moreover, there is nothing in the record, which establishes that ***the claimed position of the filter being coupled to the underside of the vehicle and relatively isolated from road debris and in a fender of the vehicle,*** presents a novel of unexpected result (See *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claim 77 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Minami et al. (Patent Number 4,422,295) and in view of design choice, and further in view of Widenhorn (Patent Number 5,499,693).

The modified Ruf device discloses the invention as recited in the rejection of claim 75; however, fails to disclose a valve

Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize a valve (11) in fluid communication with the oil inlet (10 to 11 to 20, and then to 21) of the turbocharger to prevent oil from flowing into the turbocharger when the pressure on the pressure side of the oiling system drops below a predetermined level (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a valve, as taught by Widenhorn, to improve the efficiency of the modified Ruf turbocharger.\

Claim 80 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Minami et al. (Patent Number 4,422,295), design choice; and further in view of Coester et al. (Pub. Number EP 952329 A).

The modified Ruf device discloses the invention as recited above; however, fails to disclose mounting hardware.

Coester teaches that it is conventional in the turbocharged internal combustion engine art, to utilize mounting hardware for mounting oil pump (9) in the lower region of the engine (See Figure 1, and Abstract).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Coester, to mount the oil pump to the engine.

Claim 81 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Minami et al. (Patent Number 4,422,295), design choice and Widenhorn (Patent Number 5,499,693); further in view of Werner (Patent Number 5,323,612).

The modified Ruf device discloses the invention as recited above; however, fails to disclose a pump controller.

Werner teaches that it is conventional in the turbocharger art, to utilize a pump controller (20) for varying the speed of the pump (21) according to engine speed (See Figures 1 and 4, Column 3, lines 66-68, and Column 4, lines 1-5).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a pump controller, as taught by Werner, to improve efficiency, in the modified Ruf device.

Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Evenko (Patent Number RU 20282889 C).

Ruf discloses a turbocharger system for on internal combustion engine, comprising:

a turbocharger (2,3);

an oiling system (5, 6, 14, 15) coupled to the turbocharger for supplying oil to the bearings (Not Numbered) of the turbocharger (See Column 2, lines 14-24);
and

mounting hardware (10) for remotely mounting the turbocharger away from on engine compartment of a vehicle (See Figures 1-2).

However, Ruf fails to disclose a water injection system.

Evenko teaches that it is conventional in the art of cooling a supercharged internal combustion engine, to utilize a water injection system (10, 13, 12, 7, 6) coupled to a charge air tube (4) for injecting water into a flow of gases exiting the turbocharger to cool the flow gas (See Figure and Abstract).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a water injection system, as taught by Evenko, to improve the efficiency of the Ruf device.

Note that the recitation of ***"for remotely mounting the turbocharger away from on engine compartment of a vehicle... muffler"*** is considered as the functional language (See explanation in claim 38 set forth above).

Claim 83 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Evenko (Patent Number RU 20282889 C), and Minami et al. (Patent Number 4,422,295); and further in view of Design choice.

The modified Ruf device discloses the invention as recited in the rejection above; however, fails to disclose an air filter.

Minami teaches that it is conventional in the art of lubricating system for a turbocharger to utilize an air filter (17) coupled to the air charge inlet of the turbocharger; a duct for coupling said air filter to said turbocharger (via 18) (See Figure 1).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized an air filter and a duct for coupling said air filter to said turbocharger, as taught by Minami, to improve the efficiency of the Ruf turbocharger, since the use thereof would have cleaned the air before the air is to be delivered to the turbocharger.

Additionally, for the recitations of ***“said air filter being coupled to the underside of the vehicle and relatively isolated from road debris”***, and ***“said air filter being mounted on a fender well of the vehicle”***, one having an ordinary skill in the turbocharger art, would have found the location of the filter in the instant application as a matter of design choice. Moreover, there is nothing in the record, which establishes that ***the claimed position of the filter being coupled to the underside of the vehicle and relatively isolated from road debris and in a fender of the vehicle***, presents a novel or unexpected result (See *In re Kuhle*, 526 F. 2d 553, 188 USPQ 7 (CCPA 1975)).

Claim 84 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735), in view of Evenko (Patent Number RU 20282889 C); and further in view of Minami et al. (Patent Number 4,422,295).

The modified Ruf device discloses the invention as recited in the rejection above; however, fails to disclose an oil pump.

Minami teaches that it is conventional in the art of lubricating system for a turbocharger to utilize an oil pump (37) in fluid communication with the turbocharger (12) (See Figure 1).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized an oil pump, as taught by Minami, to improve the efficiency of the Ruf turbocharger.

Claims 85-86 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruf (Patent Number 4,716,735); in view of Evenko (Patent Number RU 20282889 C), and further in view of Widenhorn (Patent Number 5,499,693).

The modified Ruf device discloses the invention as recited in the rejection above; however, fails to disclose a valve and the oiling system of the vehicle.

Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize a valve (11) in fluid communication with the oil inlet (10 to 11 to 20, and then to 21) of the turbocharger to prevent oil from flowing into the turbocharger when the pressure on the pressure side of the oiling system drops below a predetermined level; and the oiling system of the vehicle (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a valve and the oiling system of the vehicle, as taught by Widenhorn, to improve the efficiency of the modified Ruf turbocharger.

Claim 87 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Minami (Patent Number 4,422,295), in view of Koberlein (Patent Number 6,543,813 B1).

Minami discloses a method of mounting a turbocharger to an internal combustion engine driven vehicle comprising:

mounting an exhaust inlet of the turbocharger (12) to an exhaust system of a vehicle at the location on the underside of the vehicle away from an engine of the

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vehicle, the turbocharger having an oil inlet (via 38) and an oil outlet (via 45) (See Figure 1);

coupling an oil pump (37) in fluid communication with the oil outlet (45) of the turbocharger (12) and the reservoir (36) side of an oil system (See Figure 1);

providing an oil fill cap (not Numbered) couple to an oil return line extending between the oil pump (37) and the fill cap (not Numbered) (See Figure 1).

However, Minami fails to disclose the oil fill cap being a modified oil fill cap with fittings.

Koberlein teaches that it is conventional in the art of a conversion system for oil return connection, to utilize a modified oil fill cap with fittings (See Figures 11-12).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a modified oil fill cap with fittings, as taught by Koberlein, to improve the efficiency of the Minami engine, since the use thereof would have sealed the oil/lubricant system and kept the oil/lubricant not being contaminated by dirt.

Claims 90-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735); and further in view of Widenhorn (Patent Number 5,499,693).

Minami discloses a turbocharger installation kit for combustion engine, comprising:

a turbocharger (12) (See Figure 1);

an oil pump (37) for coupling to the turbocharger to assist in the flow of oil through the turbocharger (See Figure 1);

first exhaust plumbing (via 25, 26) configured for coupling said turbocharger to a flow of exhaust from an engine of a vehicle (See Figure 1);

first oil line configured for coupling between an oiling system of the vehicle and the turbocharger (See Figure 1);

a second oil line (via 38, 45) for coupling between the oil pump and the oiling system of the vehicle (See Figure 1);

a first duct (22, 23) for delivering air from the turbocharger to a throttle body of the engine (See Figure 1); and

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1).

However, Minami fails to disclose first mounting hardware, and a valve.

Ruf teaches that it is conventional in the exhaust gas turbocharger art, to utilize mounting hardware (10) configured for remotely mounting the turbocharger away from an engine of the vehicle, and a valve.

Additionally, Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize a valve (11) for coupling to the oil line (10 to 11 to 20, and then to 21) and for preventing oil flow into the turbocharger when the engine is not running (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Ruf; and a valve, as taught by Widenhorn, to reduce the construction cost, to save the space requirement and to improve the efficiency of the Minami turbocharger system.

Note that the recitation of ***"for remotely mounting the turbocharger away from on engine compartment of a vehicle... muffler"*** is considered as the functional language. The Ruf mounting hardware is capable of performing the same desired function as the instant invention having been claimed in claim 90. Additionally, a turbocharger having a mounting hardware, as taught by Ruf, can be mounted everywhere in a vehicle except the engine compartment, or can be mounted on a shelf or a table which is away from the engine compartment.

Claim 95 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735) and Widenhorn (Patent Number 5,499,693); and further in view of Coester et al. (Pub. Number EP 952329 A).

The modified Minami device discloses the invention as recited above; however, fails to disclose mounting hardware.

Coester teaches that it is conventional in the turbocharged internal combustion engine art, to utilize mounting hardware for mounting oil pump (9) in the lower region of the engine (See Figure 1, and Abstract).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Coester, to mount the oil pump to the engine.

Claim 96 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Widenhorn (Patent Number 5,499,693); and further in view of Sundles et al. (Patent Number 4,628,877).

The modified Minami device discloses the invention as recited above; however, fails to disclose electric harness, switch and relay.

Sundles teaches that it is conventional in the internal combustion engine art, to utilize electric harness, switch (45), and relay (39, 41) for providing variable voltage to the oil pump to adequately meet the variable flow requirements of the turbocharger while reducing noise output of the oil pump when flow requirements are minimal (See Figures 1-2, Column 3, lines 43-68, and Column 4, lines 1-68, and Column 5, lines 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized electric harness, switch and relay, as taught by Sundles, to improve the efficiency of the modified Minami device, since the use thereof would have minimized the friction wear of the turbocharged internal combustion engine during cold starts and provided lubrication to the turbocharger after engine has been shut off.

Claim 97 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Widenhorn (Patent Number 5,499,693); and further in view of Fehr et al. (Patent Number 4,953,515).

The modified Minami device discloses the invention as recited above; however, fails to disclose a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line.

Fehr teaches that it is conventional in the fuel injection system art, to utilize a hose (4) and fittings (Not Numbered) to connect a fuel pressure regulator (3) to an intake tube (11), an intake manifold, or to an exhaust line (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line, as taught by Fehr to improve the efficiency of the modified Minami, since the use thereof would have controlled the quantity/amount of fuel injecting into the engine.

Claim 98 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Widenhorn (Patent Number 5,499,693); and further in view of Pleuss et al. (Patent Number 6,688,103 B2).

The modified Minami discloses the invention as recited above, and further discloses said a waste gate.

Pleuss teaches that it is conventional in the exhaust gas turbocharged internal combustion engine art, to utilize a wastegate (36) coupled between an exhaust system of the vehicle at a location before the exhaust inlet of the turbocharger and a wastegate control system for regulating boost pressure (See Figure 1, Column 3, lines 19-21).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a wastegate, as taught by Pleuss, to improve the efficiency of the modified Minami device, since the use thereof would have controlled/regulated the charge pressure.

Claim 99 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Widenhorn (Patent Number 5,499,693); and further in view of Werner (Patent Number 5,323,612).

The modified Minami device discloses the invention as recited above; however, fails to disclose a pump controller.

Werner teaches that it is conventional in the turbocharger art, to utilize a pump controller (20) for varying the speed of the pump (21) according to engine speed (See Figures 1 and 4, Column 3, lines 66-68, and Column 4, lines 1-5).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a pump controller, as taught by Werner, to improve efficiency, in the modified Minami device.

Claims 100-102 and 104 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735); and further in view of Coester et al. (Pub. Number EP 952329 A).

Minami discloses a turbocharger installation kit for combustion engine, comprising:

a turbocharger (12) (See Figure 1);

an oil pump (37) for coupling to the turbocharger to assist in the flow of oil through the turbocharger (See Figure 1);

first exhaust plumbing (via 25, 26) configured for coupling said turbocharger to a flow of exhaust from an engine of a vehicle (See Figure 1);

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1);

first oil line configured for coupling between an oiling system of the vehicle and the turbocharger (See Figure 1);

a second oil line (via 38, 45) for coupling between the oil pump and the oiling system of the vehicle (See Figure 1);

a first duct (22, 23) for delivering air from the turbocharger to a throttle body of the engine (See Figure 1); and

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1).

However, Minami fails to disclose first mounting hardware and second mounting hardware.

Ruf teaches that it is conventional in the exhaust gas turbocharger art, to utilize mounting hardware (10) configured for remotely mounting the turbocharger away from an engine of the vehicle (See Figures 1-2).

Additionally, Coester teaches that it is conventional in the turbocharged internal combustion engine art, to utilize mounting hardware for mounting oil pump (9) in the lower region of the engine (See Figure 1, and Abstract).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Ruf; and mounting hardware, as taught by Coester, , to reduce the construction cost, to save the space requirement and to improve the efficiency of the modified Minami turbocharger system.

Note that the recitation of ***"for mounting the turbocharger to the underside of the vehicle and away from an engine compartment of a vehicle"*** is considered as the functional language. The Ruf mounting hardware is capable of performing the same desired function as the instant invention having been claimed in claim 90. Additionally, a turbocharger having a mounting hardware, as taught by Ruf, can be mounted everywhere in a vehicle except the engine compartment, or can be mounted on a shelf or a table which is away from the engine compartment.

Claim 103 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735) and Coester et al. (Pub. Number EP 952329 A); and further in view of Widenhorn (Patent Number 5,499,693).

The modified Minami device discloses the invention as recited in the rejection of claims ; however, fails to disclose a valve.

Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize a valve (11) for coupling to the oil line (10 to 11 to 20, and then to 21) and for preventing oil flow into the turbocharger when the engine is not running (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a valve, as taught by Widenhorn, to improve the efficiency of the modified Minami turbocharger.

Claim 105 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Coester et al. (Pub. Number EP 952329 A); and further in view of Sundles et al. (Patent Number 4,628,877).

The modified Minami device discloses the invention as recited above; however, fails to disclose electric harness, switch and relay.

Sundles teaches that it is conventional in the internal combustion engine art, to utilize electric harness, switch (45), and relay (39, 41) for providing variable voltage to

the oil pump to adequately meet the variable flow requirements of the turbocharger while reducing noise output of the oil pump when flow requirements are minimal (See Figures 1-2, Column 3, lines 43-68, and Column 4, lines 1-68, and Column 5, lines 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized electric harness, switch and relay, as taught by Sundles, to improve the efficiency of the modified Minami device, since the use thereof would have minimized the friction wear of the turbocharged internal combustion engine during cold starts and provided lubrication to the turbocharger after engine has been shut off.

Claim 106 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Coester et al. (Pub. Number EP 952329 A); and further in view of Fehr et al. (Patent Number 4,953,515).

The modified Minami device discloses the invention as recited above; however, fails to disclose a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line.

Fehr teaches that it is conventional in the fuel injection system art, to utilize a hose (4) and fittings (Not Numbered) to connect a fuel pressure regulator (3) to an intake tube (11), an intake manifold, or to an exhaust line (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a hose and fittings to connect a fuel pressure

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regulator to an intake tube, an intake manifold, or to an exhaust line, as taught by Fehr to improve the efficiency of the modified Minami, since the use thereof would have controlled the quantity/amount of fuel injecting into the engine.

Claim 107 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Coester et al. (Pub. Number EP 952329 A); and further in view of Pleuss et al. (Patent Number 6,688,103 B2).

The modified Minami discloses the invention as recited above, and further discloses said a waste gate.

Pleuss teaches that it is conventional in the exhaust gas turbocharged internal combustion engine art, to utilize a wastegate (36) coupled between an exhaust system of the vehicle at a location before the exhaust inlet of the turbocharger and a wastegate control system for regulating boost pressure (See Figure 1, Column 3, lines 19-21).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a wastegate, as taught by Pleuss, to improve the efficiency of the modified Minami device, since the use thereof would have controlled/regulated the charge pressure.

Claim 108 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735)

and Coester et al. (Pub. Number EP 952329 A); and further in view of Werner (Patent Number 5,323,612).

The modified Minami device discloses the invention as recited above; however, fails to disclose a pump controller.

Werner teaches that it is conventional in the turbocharger art, to utilize a pump controller (20) for varying the speed of the pump (21) according to engine speed (See Figures 1 and 4, Column 3, lines 66-68, and Column 4, lines 1-5).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a pump controller, as taught by Werner, to improve efficiency, in the modified Minami device.

Claims 109-111 and 113 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735); and further in view of Sundles et al. (Patent Number 4,628,877).

Minami discloses a turbocharger installation kit for combustion engine, comprising:

a turbocharger (12) (See Figure 1);

an oil pump (37) for coupling to the turbocharger to assist in the flow of oil through the turbocharger (See Figure 1);

first exhaust plumbing (via 25, 26) configured for coupling said turbocharger to a flow of exhaust from an engine of a vehicle (See Figure 1);

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1);

first oil line configured for coupling between an oiling system of the vehicle and the turbocharger (See Figure 1);

a second oil line (via 38, 45) for coupling between the oil pump and the oiling system of the vehicle (See Figure 1);

a first duct (22, 23) for delivering air from the turbocharger to a throttle body of the engine (See Figure 1); and

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1).

However, Minami fails to disclose first mounting hardware and an electric harness, switch, and relay.

Ruf teaches that it is conventional in the exhaust gas turbocharger art, to utilize mounting hardware (10) configured for remotely mounting the turbocharger away from an engine of the vehicle (See Figures 1-2).

Additionally, Sundles teaches that it is conventional in the internal combustion engine art, to utilize electric harness, switch (45), and relay (39, 41) for providing variable voltage to the oil pump to adequately meet the variable flow requirements of the turbocharger while reducing noise output of the oil pump when flow requirements are minimal (See Figures 1-2, Column 3, lines 43-68, and Column 4, lines 1-68, and Column 5, lines 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Ruf; and electric harness, switch and relay, as taught by Sundles, to improve the efficiency of the modified Minami device, since the use thereof would have minimized the friction wear of the turbocharged internal combustion engine during cold starts and provided lubrication to the turbocharger after engine has been shut off.

Note that the recitations of ***"for remotely mounting the turbocharger to the underside of the vehicle and away from on engine compartment of a vehicle"*** and ***"being configured to mount in a space normally occupied by an existing muffler of the vehicle"*** are considered as the functional language. The Ruf mounting hardware is capable of performing the same desired function as the instant invention having been claimed in claim 109 and 111. Additionally, a turbocharger having a mounting hardware, as taught by Ruf, can be mounted every where in a vehicle except the engine compartment, or can be mounted on a shelf or a table which is away from the engine compartment.

Claim 112 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Sundles et al. (Patent Number 4,628,877); and further in view of Widenhorn (Patent Number 5,499,693).

The modified Minami device discloses the invention as recited above; however, Minami fails to disclose a valve.

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Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize a valve (11) for coupling to the oil line (10 to 11 to 20, and then to 21) and for preventing oil flow into the turbocharger when the engine is not running (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a valve, as taught by Widenhorn, to improve the efficiency of the Minami turbocharger system.

Claim 114 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735) and Sundles et al. (Patent Number 4,628,877); and further in view of Coester et al. (Pub. Number EP 952329 A).

The modified Minami device discloses the invention as recited above; however, fails to disclose mounting hardware.

Coester teaches that it is conventional in the turbocharged internal combustion engine art, to utilize mounting hardware for mounting oil pump (9) in the lower region of the engine (See Figure 1, and Abstract).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Coester, to mount the oil pump to the engine.

Claim 115 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Sundles et al. (Patent Number 4,628,877); and further in view of Fehr et al. (Patent Number 4,953,515).

The modified Minami device discloses the invention as recited above; however, fails to disclose a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line.

Fehr teaches that it is conventional in the fuel injection system art, to utilize a hose (4) and fittings (Not Numbered) to connect a fuel pressure regulator (3) to an intake tube (11), an intake manifold, or to an exhaust line (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line, as taught by Fehr to improve the efficiency of the modified Minami, since the use thereof would have controlled the quantity/amount of fuel injecting into the engine.

Claims 116-118 and 120 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735); and further in view of Fehr et al. (Patent Number 4,953,515).

Minami discloses a turbocharger installation kit for combustion engine, comprising:

a turbocharger (12) (See Figure 1);

an oil pump (37) for coupling to the turbocharger to assist in the flow of oil through the turbocharger (See Figure 1);

first exhaust plumbing (via 25, 26) configured for coupling said turbocharger to a flow of exhaust from an engine of a vehicle (See Figure 1);

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1);

first oil line configured for coupling between an oiling system of the vehicle and the turbocharger (See Figure 1);

a second oil line (via 38, 45) for coupling between the oil pump and the oiling system of the vehicle (See Figure 1);

a first duct (22, 23) for delivering air from the turbocharger to a throttle body of the engine (See Figure 1); and

second exhaust plumbing for coupling to the turbocharger and exiting exhaust from the turbocharger (via 27) (See Figure 1).

However, Minami fails to disclose a hose and fittings to connect a fuel regulator to an intake tube, an intake manifold, or to an exhaust line

Ruf teaches that it is conventional in the exhaust gas turbocharger art, to utilize mounting hardware (10) configured for remotely mounting the turbocharger away from an engine of the vehicle (See Figures 1-2).

Additionally, Fehr teaches that it is conventional in the fuel injection system art, to utilize a hose (4) and fittings (Not Numbered) to connect a fuel pressure regulator (3) to an intake tube (11), an intake manifold, or to an exhaust line (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Ruf; and a hose and fittings to connect a fuel pressure regulator to an intake tube, an intake manifold, or to an exhaust line, as taught by Fehr to improve the efficiency of the modified Minami, since the use thereof would have controlled the quantity/amount of fuel injecting into the engine.

Note that the recitations of ***"for remotely mounting the turbocharger to the underside of the vehicle and away from an engine compartment of a vehicle"*** and ***"being configured to mount in a space normally occupied by an existing muffler of the vehicle"*** are considered as the functional language. The Ruf mounting hardware is capable of performing the same desired function as the instant invention having been claimed in claim 116 and 118. Additionally, a turbocharger having a mounting hardware, as taught by Ruf, can be mounted everywhere in a vehicle except the engine compartment, or can be mounted on a shelf or a table which is away from the engine compartment.

Claim 119 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735) and Fehr et al. (Patent Number 4,953,515); and further in view of Widenhorn (Patent Number 5,499,693).

The modified Minami device discloses the invention as recited in the rejection of claims ; however, fails to disclose a valve.

Widenhorn teaches that it is conventional in the art of lubricating bearings of a turbocharger to utilize a valve (11) for coupling to the oil line (10 to 11 to 20, and then to 21) and for preventing oil flow into the turbocharger when the engine is not running (See Figures 1-2; Column 1, lines 14-25; Column 2, lines 9-18; Column 3, lines 50-67, and Column 3, lines 1-25).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a valve, as taught by Widenhorn, to improve the efficiency of the modified Minami turbocharger.

Claim 121 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf et al. (Patent Number 4,716,735) and Fehr et al. (Patent Number 4,953,515); and further in view of Coester et al. (Pub. Number EP 952329 A).

The modified Minami device discloses the invention as recited above; however, fails to disclose mounting hardware.

Coester teaches that it is conventional in the turbocharged internal combustion engine art, to utilize mounting hardware for mounting oil pump (9) in the lower region of the engine (See Figure 1, and Abstract).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized mounting hardware, as taught by Coester, to mount the oil pump to the engine.

Claim 122 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Fehr et al. (Patent Number 4,953,515); and further in view of Sundles et al. (Patent Number 4,628,877).

The modified Minami device discloses the invention as recited above; however, fails to disclose electric harness, switch and relay.

Sundles teaches that it is conventional in the internal combustion engine art, to utilize electric harness, switch (45), and relay (39, 41) for providing variable voltage to the oil pump to adequately meet the variable flow requirements of the turbocharger while reducing noise output of the oil pump when flow requirements are minimal (See Figures 1-2, Column 3, lines 43-68, and Column 4, lines 1-68, and Column 5, lines 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized electric harness, switch and relay, as taught by Sundles, to improve the efficiency of the modified Minami device, since the use thereof would have minimized the friction wear of the turbocharged internal combustion engine during cold starts and provided lubrication to the turbocharger after engine has been shut off.

Claim 112 is rejected under 35 U.S.C. 103(a) as being unpatentable over Minami et al. (Patent Number 4,422,295), in view of Ruf (Patent Number 4,716,735) and Fehr et al. (Patent Number 4,953,515); and further in view of Werner (Patent Number 5,323,612).

The modified Minami device discloses the invention as recited above; however, fails to disclose a pump controller.

Werner teaches that it is conventional in the turbocharger art, to utilize a pump controller (20) for varying the speed of the pump (21) according to engine speed (See Figures 1 and 4, Column 3, lines 66-68, and Column 4, lines 1-5).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a pump controller, as taught by Werner, to improve efficiency, in the modified Minami device.

Allowable Subject Matter

Claims 53, 55-57, and 59-64 are allowed.

Claims 88-89 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Koslow (US Patent Number 4,520,773) discloses fuel injection cleaning and testing system and apparatus.

- Guglielmo et al. (US Patent Number 6,371,092 B1) disclose a fuel system with dual fuel injectors for internal combustion engines.
- Walczak et al. (US Patent Number 6,289,853 B1) disclose a water injection system for an internal combustion engine of a marine-propulsion.
- Gamell (US Patent Number 3,935,848) discloses a supercharger system for an internal combustion engine.
- Schilling (US Patent Number 2,774,342) discloses an internal combustion engine.
- Koberlein (Patent Number 6,543,813 B1) discloses a conversion system for oil return connection to skid steer and other apparatus having an oil fill cap and fittings (See Figures 11 and 12).
- Mahlanen (Pub. Number WO 03/089780 A1) discloses a spraying method and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Additionally, the new Central FAX Number **(571) 273-8300** is effective on **July 15, 2005**. The old number (703-872-9306) will be routed to the new number until September 15, 2005.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
March 08, 2005


Thai-Ba Trieu
Primary Examiner
Art Unit 3748